EM-45 COMMENTS ON THE ROCKY FLATS FINAL TREATABILITY STUDIES PLAN (TSP)

GENERAL:

1. Integration of all technologies being addressed by the Office of Technology Development (OTD), Environmenmtal Restoration and Waste Management (EM-50) should be noted and their applicability evaluated. It may be that some of these will not be available in time to address the early Operable Units (OUs), but others may well be.

   Innovative technologies are not being actively pursued by Rocky Flats Plant (RFP). Interagency Agreement time constraints (e.g., completion of the treatability studies within 36 months of TSP approval by the United States Environmental Protection Agency (EPA) and the State) effectively limit selection and evaluation to only well-developed technologies in order to meet those constraints. The text should address this situation, anticipating possible concerns among the readers that RFP is not "forward looking" in technology evaluation and selection.

2. The testing of stabilization technologies on untreated soils should be examined more carefully since these technologies could generate large quantities of materials which would have to be disposed. Perhaps these technologies should only be tested with materials generated from physical separation. Soil washing, magnetic separation and true clean processes rather than untreated soils.

3. The proposed pilot scale testing with oxidation of volatile organic compounds does not seem appropriate because the 881 Hillside Treatment Facility will use this process. The data from the treatment plant operation will be far more valuable than limited testing. In addition there are several other facilities already using these technologies at full scale operation. If the proposed pilot scale testing is the start-up testing of the 881 Hillside Treatment Facility, it should be so indicated in the report.

4. In the presentation of the operable units (OUs), it is difficult for the reader to locate the units relative to the site since only a very brief discussion is presented. As an example, OU-1 is the 881 Hillside which is described as located in the southeast corner of RFP and consists of 11 hazardous substance sites. OU locations should be delineated in a figure similar to Figure 2-2.

5. There should be a discussion of waste minimization efforts in Environmental Restoration activities at Rocky Flats.

SPECIFIC COMMENTS:

1. Executive Summary: A table listing the technologies chosen for treatability studies will be helpful in this section.

2. It appears that page VIII is out of sequence.

3 Two copies of Page VI are present

4 Page 3-1, Para. 2 Will the guidelines and any additional requirements developed in the TSP be used in the individual Corrective Measures Study/Feasiblity Study (CMS/FS)? It is not clear from the write-up please clarify

5. Page 3-1, Para. 3: It is unclear if the TSP requires sampling of the site for characterization beyond what is already being done. If so, it would be helpful to explain how will this be coordinated with existing sampling plans.

6 Page 3-6, Para. 1: It is unclear what will happen if a technology is chosen for a study at a specific OU before the TSP is able to do the study. Will that technology be eliminated from the TSP, or will the TSP still evaluate the technology? Please clarify.

7. Page 3-6, Sect. 3.2, Para. 1: It appears that participation in an integrated program may be less expensive. It would be helpful if the text elaborated on how the cost of participating in integrated programs compare with Rocky Flats evaluating the same technology.

8. Pages 3-6 to 3-8; Subsection 3.2: With regard to the relationship of the TSP to Other Treatability Programs at RFP, it is stated that due to reasons of funding and outside control of external programs (OTD funded programs and EPA SITE demonstrations), RFP participation is questionable. Furthermore it is stated that "once participation is decided, it is the intent of DOE to coordinate with EPA and Colorado Department of Health (CDH) prior to conducting any treatability testing including those conducted off-site." These statements makes the reader wonder how participation is to be "decided" and how active will the RFP participants be in cooperating with the external programs. It would seem that active efforts would be made to resolve the funding and outside control issues; and only after then should decisions be made regarding participation. Considering that the site and the participants are "government" related, the citizenry could demand that more cooperation be implemented.

9. Page 3-8, Sect. 3.3, Para. 1: All results should be reported since it may not be possible to determine if they are significant until all technologies are evaluated.

10. Pages 4-1 to 4-6, Subsection 4 1 Summary of Contaminants--Operable Units. In presenting the operable units (OU), it is difficult for the reader to locate the units relative to the site since only a very brief discussion followed. As an example, OU-1 is the 881 Hillside which is described as located in the southeast corner of RFP and consists of 11 hazardous substance sites Could this be marked in a figure similar to Figure 2-2? It is also noted in Table 4-1 (Page T-2) that the reference title of U.S DOE 1990a includes the words "High Priority Sites" in reference to 881 Hillside Should the different treatability studies be phased to take into consideration any prioritization established?

11 Page 5-5, Sect. 5.1.2, Para 2. A short list of the "numerous technology data bases" might be helpful to the reader and regulators.

12 Page 5-8, Sect 5 1 3 The text states that "The technology was then assessed against other proven technologies and if it offered no significant advantages in terms of effectiveness, cost, Operating and Management (O&M) requirements, or reduction in adverse impacts, it was eliminated from consideration." This type of comparison seems difficult to do if the emerging technology has only been tested in the laboratory, since many unforeseen problems can occur once the technology is implemented in the field. Please clarify.

13. Page 5-20: "In-Site Soil Flushing For Organics" - The description refers to above-ground soil flushing or washing, but above-ground treatment is not discussed previously. Please clarify.

14. Page 5-22: "Thermal Desorption," Second Paragraph, Line 2: "Another process is . . . ", the word "is" should be changed to "uses."

15 Page 5-23 Subsection 5.2.4 Final Selection of Technologies for Treatability Studies for Testing. Reference is made in the text to Table 5-8 (See page T-118 for this table) summarizing the technologies selected for bench/laboratory tests and to Table 5-9 (See page T-119 for this table) for those selected for pilot scale testing. It should be noted that the technologies selected are all in advance stages of development or commercialization. Technologies which passed preliminary screening but were not selected for treatability studies include many which are under development by OTD (See Appendix B).

16. Page 6-3, Sect. 6.6: Under Data Management, please define "RFEDs".

17 Page T-14, Table 5-2: The presence of volatile organics is noted in the description of the OUs, however, there are no volatile organics identified in the soils collum of this table. Please clarify.

18. Page T-25, Electron Beam, Adverse Impacts· The text addresses activation by the electron beam. It should be noted that the beam would need very high energies to produce new radionuclides. This should not be a problem at energies used for destruction of volatile organic compounds.

19. Page T-31, Plasma Arc, Adverse Impacts: Please define "PIC".

20 Page T-32, Supercritical Water Oxidation, Implementability: If this technology, effective in the parts per billion range, is not applicable to organic concentrations in parts per million range, why is it retained? This should be clarified as most groundwater and soil at Rocky Flats is contaminated at these levels.

21 Page T-36, Electron Beam, Adverse Impacts: It should be noted that the electron beam would need very high energies to produce new

radionuclides This should not be a problem at energies used for destruction of volatile organic compounds.

22 Page T-43, Trickling Filter, Applicability: It appears that the word "organics" is misspelled.

23. Pages T-82 and T-83: It appears that soil washing is listed twice.

24. Pages T-86 and T-93 Masonry cement not retained for metals contaminant group, but is for the radionuclides. Please clarify.

25. Page B-1.6, First Paragraph, Line 3: It appears the word "exchanged" should be "exchange."

26. Page B-1.6, Second Paragraph, Line 3: It appears that the word "regrade" should be "regenerate."

27. Page B-1.2, Second Paragraph, Line 7: Please define a "radiocolloid".

28. Page B-1.20, Second Paragraph: Portland cement is being used at Rocky Flats, it should be clarified as to why it is being proposed for a treatability study.

29. Page B-1.23, Description, Line 1: Please define "aquitated".

30. Page B-2.3, First Paragraph: The "number of air stripping units" should be replaced with "number of transfer units" since this is the proper terminology.

31. Page B-2.3, Last Paragraph, Last Line: It appears that the word "is" should be "are."

32. Page B-2.22, Last Paragraph: Please check the dates on the defense waste processing facility.

33. Page B-2.25, First Paragraph, Line 7: It appears that "pretreatment be acceptable" should be "pretreatment to be acceptable."

34. Page B-2.36, Does the Low Temperature Thermal Treatment process simply volatilize organic compounds, or does it also destroy them? This is not clear from the "description" and "advantages and disadvantages" discussion.

35. Appendix C Title: To reflect the contents the title should be changed to "Bench or Laboratory Scale Treatability Studies Statements of Work".

36. Page C-3, Third Paragraph, First Word: It appears that the word "it" should be "if".

37. Page C-15, Ultrafiltration/Microfiltration: The text should explain how this work will be coordinated with the OU-2 surface water seeps treatment studies scheduled for the interim measure.

38 Page C-16, Second Paragraph: Second sentence does not make sense. Please clarify.